UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/719,508	12/12/00	ZINDEL J	514413-3852

020999
FROMMER LAWRENCE & HAUG
745 FIFTH AVENUE- 10TH FL.
NEW YORK NY 10151

HM12/1106

EXAMINER	
BALASUBRAMANIAN, V	
ART UNIT	**PAPER NUMBER**
1624	5

DATE MAILED: 11/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.	Applicant(s)
09/719,508	ZINDEL ET AL.
Examiner	**Art Unit**
Venkataraman Balasubramanian	1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Dec 12, 2000* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-10* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Applicants' preliminary amendment, which included amendment to claims 3-9 and cancellation of claim 11, filed on 12/12/2000, is made of record.

Claims 1-10 are now pending.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Following reasons apply. Any claim not specifically rejected is rejected as being dependent on a rejected claim.

1. Claim 1 is indefinite for more than one reason. First line of the claim 1 recites the compound of formula I and its salt in plural but the last line of the claim1 is in singular. Note also the last line on page 33 of claim I is in plural. Appropriate corrections are needed. Again, in claim 1, the last but second line as recited runs into the last line of the claim. Note it reads as ".... equally substituted by chlorination." An appropriate correction is needed.

Furthermore, it is not clear what is meant by the phrase "equally substituted". Are the substituents on both triazines meant to be same or the number of substituents meant to be equal?

2. Claim 7 appears to be an improper dependent claim on claim 1. Note claim 1 does not recite any solvent. Hence, the phrase "the boiling point of **the solvent** in question" recited in claim 7 has no antecedent basis. Changing the dependency of claim 7 from claim 1 to claim 6 is suggested. Similarly, as the limitation in claim 6 permits mixture of solvents, replacement of " the boiling point of the solvent in question" with "the boiling point of solvent or mixture of solvents employed" is suggested for clarity and consistency.

3. Process claim 10 is indefinite for more than one reason. First of all, it recites "A is a (C_1-C_6) alkylene" which means A is a divalent radical. However, claim 9, on which claim 10 is dependent, shows A as monovalent. Also recitation of the term "contains" in the definition of heterocyclic radical in this claim is indefinite as the term "contains" is open-ended and implies more than what is being positively recited. Note MPEP 2111.03: 'The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps'.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giencke et al. WO 97/08156 or Lorenz et al. US 6,069,114 in view of Chakrabarti et al., Tetrahedron, 31(16) 1879-1882, 1975.

Giencke et al. teach several diamino triazines, which include those claimed in the instant claims for the same use as herbicides. See formula (I) and the definition of A, X, R^1, R^2, R^3, R^4, R^5 and in shown on pages 2-4. Note the definition of these groups i.e. A, X, R^1, R^2, R^3, R^4, R^5 include those groups claimed herein for A, R, R^1, R^2 and R^3 of instant compound of formula IV. Note the intermediate compound of formula IV corresponds to instant intermediate of formula I.

Giencke et al. also teaches various processes of making the final product and the intermediate. See pages 19-26. One such process of making the compound of formula I, involves chlorination of 2-alkylthio-triazine and then the displacement of the 2-chloro group in the resultant triazine with amine as claimed in the instant claims. See page 25, second paragraph for the chlorination of 2-alkylthio-triazine and note use of various chlorinating agents including chlorine and phosphorous oxychloride, inert organic solvent and suitable reaction temperature are also suggested therein. See pages 19-20 for reaction of 2-chloro-triazine with an amine (i.e. compound IV with V).

However, Giencke et al does not teach an example for making 2-chloro-triazine using the above said chlorination process and reaction of the resultant 2-chloro-triazine with amine. Note experimental details and compounds made shown in Table 1 and 2 are for making final product with no indication that the 2-chloro-triazine compound used for making these compounds, is made via the chlorination process stated above.

The second primary reference, Lorenz et al. also teaches several 2-amino-4-bicycloamino triazines, which include diamino-triazines generically claimed in the instant claims, for use as herbicides. See formula I on col.1 and note the definition of various variable groups. Note on col. 14, Lorenz et al., teaches reaction of compound of formula IV with the amine of formula V to make compound of formula I as claimed in the instant claims. Note the chlorination of intermediate IV is indicated on col. 17 lines 37-42 and the use of chlorinating agents, inert organic solvent and reaction temperature are also suggested in lines 45-55, on col. 18. Note these suggestions are same as those of Giencke et al.

Again, Lorenz et al., also does not teach an example of making the intermediate 2-chloro-traizine using the chlorination process.

But both Giencke et al. and Lorenz et al. rely on the secondary reference, Chakrabarti et al. for experimental support.

Chakrabarti et al. teaches chlorination of analogous triazine compound 11 wherein both the ethylthio group were replaced by chloro groups to get compound 12. See page 1880, compound 11 and compound 12. See page 1881, second column, last

paragraph and page 1882, column 1, first paragraph for experimental details of such a chlorination process.

Thus, the secondary reference provides experimental support for the chlorination process.

Furthermore, starting material of the primary references and the secondary reference are analogous in that they are alkylthio-triazines and the process is same, namely chlorination of alkylthio group to form chloro group. Thus, one having ordinary skill in the art at the time of the invention was made would have been motivated to combine either of the primary reference with the secondary reference and employ the process taught by these prior art to the starting materials and reactants including optimization of various process parameters such as reaction conditions, choice of suitable solvent etc. as permitted by the references and expect to obtain the desired product because he would have expected the analogous starting materials and reactants react similarly. It has been held that application of an old process to an analogous material to obtain a result consistent with the teachings of the art would have been obvious to one having ordinary skill. Note In re Kerkhoven 205 USPQ 1069.

Comparative data provided on page 17 cannot obviate the obviousness rejection stated above, as it is an improper comparison for the following reasons:

a) scope of the chlorination process of instant claims is broader than chlorination using chlorine as shown in the example of page 17

b) the duration of chlorination is longer in the prior art than that is used in the comparative study, a shorter duration of chlorination can therefore lead to lower yield

c) one trained in the art would know that duration of chlorination vary with substrate and need to be optimized and

d) this fact is clearly exemplified in the instant examples wherein the chlorination is done for longer time than the comparative example.

Hence, the yields of the comparative and instant examples are not comparable.

References cited in the Information Disclosure Statement are made of record.

Any inquiry concerning this communication from the examiner should be addressed to Venkataraman Balasubramanian (Bala) whose telephone number is (703) 305-1674. The examiner can normally be reached on Monday through Thursday from 8.00 AM to 5.30 PM.

The fax phone number for the organization where this application or proceeding is assigned (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

V. Balasubramanian
Venkataraman Balasubramanian

11/4/2001